Policy Research Working Paper 5871

Cross Border Banking Supervision

Incentive Conflicts in Supervisory Information Sharing between Home and Host Supervisors

Katia D'Hulster

The World Bank
Financial and Private Sector Development
Financial Systems Practice
November 2011

Policy Research Working Paper 5871

Abstract

The global financial crisis has uncovered a number of weaknesses in the supervision and regulation of cross border banks. One such weakness was the lack of effective cooperation among banking supervisors. Since then, international bodies, such as the G-20, the Financial Stability Board and the Basel Committee have actively promoted the use of supervisory colleges. The objective of this paper is to explore the obstacles to effective cross border supervisory information sharing. More specifically, a schematic presentation illustrating the misalignments in incentives for information sharing between home and host supervisors under the current supervisory task-sharing anchored in the Basel Concordat is developed. This paper finds that in the absence of an ex ante agreed upon resolution and burden-sharing mechanism and deteriorating health of the bank, incentive conflicts escalate and supervisory cooperation breaks down. The promotion of good practices for cooperation in supervisory colleges is thus not sufficient to address the existing incentive conflicts. What is needed is a rigorous analysis and review of the supervisory task-sharing framework, so that the right incentives are secured during all stages of the supervisory process. For this purpose, it is essential that policy makers integrate and harmonize the current debates on crisis management, resolution policy and good supervisory practices for cross border banking supervision.

This paper is a product of the Financial Systems Practice, Financial and Private Sector Development Vice Presidency. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at kdhulster@worldbank.org.

Cross Border Banking Supervision: Incentive Conflicts in Supervisory Information Sharing between Home and Host supervisors

Katia D'Hulster

The author is a Senior Financial Sector Specialist in the Financial and Private Sector Development Vice Presidency of the World Bank (kdhulster@worldbank.org). The author wishes to thank Marc Quintyn of the International Monetary Fund (IMF), Freddy Van den Spiegel of the Vrije Universiteit Brussels (VUB), Erik Feyen, Cedric Mousset, Valeria Salomao-Garcia, Sebnem Sener, David Scott and Sophie Sirtaine of the World Bank for thoughtful inputs and comments.

1. Introduction

The global financial crisis has uncovered a number of weaknesses in the supervision and regulation of cross border banks[1]. One such weakness was the lack of effective cooperation among banking supervisors. Since then, international bodies such as the G 20, the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (the Basel Committee) have responded in a concerted effort and publicly promoted the use of supervisory colleges[2]. Under the oversight of the FSB, supervisory colleges for each of the largest global financial institutions have now been established[3] and high level principles for good practices in supervisory colleges have been released (Basel Committee, 2010).

Despite the renewed attention, supervisory colleges have been in place for a long time. Indeed, the first supervisory colleges date back to the 1980s, and they became more widespread during the Basel II implementation. In the recent literature analyzing the causes and consequences of the financial crisis, little evidence of the effectiveness of global supervisory colleges in identifying, preventing or handling the fall-out of the financial crisis at an institutional level has emerged. The Basel Committee performed a survey in the summer of 2009 on the operations of supervisory colleges, but the results remain largely confidential.

So, how is it possible that supervisory colleges have entered into the spotlight again without their effectiveness being adequately and comprehensively assessed? What are the safeguards that have been put in place so that colleges will work more effectively next time around? Can they actually be effective in the absence of a bank resolution mechanism and/or an ex ante agreed upon burden-sharing mechanism? More fundamentally, is the current supervisory task-sharing between home and host supervisor still aligned with today's global financial landscape? Does it not unduly disadvantage host supervisors? Finally, does the supervisory task-sharing provide the right incentives for cooperation among supervisors during all stages of the supervisory process?

The objective of this paper is to identify the instances where misalignments in incentives between home and host supervisors occur and to analyze policy options to address them. These distortions in incentives can lead to manipulation of judgmental supervisory information, delays in the sharing of information between home and host supervisors and ring-fencing[4]. They can have systemic impact, particularly for host supervisors whose financial systems are dominated by foreign banks.

The application of the principal-agent theory provides the theoretical framework to identify the information asymmetry problems that result in self capture, industry capture and political capture of the supervisor at the domestic level. The analysis is then extended to the cross border context, taking into

[1] This paper focuses on prudential banking supervision in an international context. Consumer protection, other aspects of regulation and supervisory arrangements in the European Union (EU) lie outside of the scope of this paper.
[2] Supervisory colleges are groups of supervisors with the primary objective of exchanging information and establishing a dialogue in order to ensure that they are able to identify and address the main risks across a banking group. More information on supervisory colleges is provided in Section 5 of this paper.
[3] FSB (2010 d, p 17 section VII.5)
[4] Ring-fencing can be defined as an action or regulation by a host supervisor to protect domestic assets of a bank so that they can be seized and liquidated under the local law in case of failure of the parent. Ring-fencing can take various forms, can occur at various stages of the supervision process and can be applied at the level of the institution and at the level of the overall banking system..

account the fact that cross border externalities are commonly ignored by banking supervisors. This paper finds that these domestic "capture" problems are exacerbated in a cross border context and together with the observed disregard of cross border externalities, they lead to a further weakening in the incentives to cooperate.

At an institutional level, the geographic risk profile as well as the health of the banking group will influence the intensity of the conflicts of interest between home and host supervisors. Indeed, the two main drivers for the home and host supervisor's incentives to share information are; the materiality of the host's operations to the banking group and the systemic nature of the foreign operations in the host jurisdiction, respectively. This paper illustrates this point by presenting a schematic presentation of incentive conflicts between home and host supervisors. In a setting with a home and a host supervisor of a systemic banking group with integrated functions such as funding and liquidity, three scenarios are analyzed; first the case of ongoing preventative supervision; second, the deteriorating health of the parent bank and third, the deteriorating health of the subsidiary. In the preventative stage, there are only a limited number of instances where both home and host supervisors have strong incentives to openly share accurate and timely information. This paper demonstrates that as the health of the parent deteriorates, the home supervisor will have an incentive to delay the sharing of information or minimize the seriousness of the situation. The host supervisor on the other hand will have an incentive to apply ring-fencing measures in its jurisdiction. Sudden ring-fencing decisions have the potential to further increase stress on the banking group's legal entities in other jurisdictions and on the banking group. As a result, in some cases, supervisory information sharing in a supervisory college and consequent early remedial action may actually increase the probability of further distress in the banking group and complicate crisis management. Similarly, in those cases in which the health of the subsidiary deteriorates, the host supervisor has an incentive to overstate the problems, particularly if the operations are systemic in the host jurisdiction.

One would expect that policies and practices have been designed to take into account these specific findings. In reality, little has changed since the crisis. The current supervisory arrangements for cross border supervision do not address these inherent incentive distortions. Considering the leading role of the home supervisor, in the absence of mediation or conflict resolution mechanisms and accountability arrangements for home supervisors outside their home jurisdiction, the host supervisor finds itself at a disadvantage. Additionally, since the crisis, most of the cross border policy efforts have been directed towards crisis and resolution measures with limited consideration of their inter-linkages with preventative supervisory cooperation.

Without any mechanisms to induce, or even force, supervisors to cooperate in spite of their respective domestic mandates, supervisory colleges cannot be effective for all banking groups. Additionally, in the absence of an international resolution mechanism and an ex ante burden-sharing mechanism, supervisory cooperation is very likely to break down again as the health of the financial institution deteriorates. It is therefore crucial that policy makers do not divorce the crisis management and resolution policy debate from the discussion about good supervisory practices in cross border supervision. The development of crisis management and resolution policies should go hand in hand with preventative and forward-looking supervision.

This study is written from the perspective of the host supervisor and is divided into six parts. The following section explains the experience with the current supervisory task-sharing between home and host supervisors during the financial crisis. Section 3 describes the challenges and incentive problems in cross border banking supervision. A schematic presentation of information sharing incentives for home and the host supervisor under three scenarios (preventative supervision, deteriorating health of the parent and deteriorating health of the subsidiary) is developed in Section 4. Section 5 explores policy options to address the misalignments in incentives identified. The final section concludes.

II. Supervisory Arrangements for Cross Border Banking Supervision and Experience during the Global Financial Crisis

1. Supervisory Arrangements for Cross Border Banking Supervision

Arrangements for cross border supervision are described in the 2006 *"Core Principles for Effective Banking Supervision*[5]". The Core Principles reflect an international consensus regarding good practices in banking supervision and were intended to facilitate convergence in supervisory frameworks. The Core Principles establish the fundamental requirement for supervision on a group wide basis. Core Principle 24 states that "[a]n essential element of banking supervision is that supervisors supervise the banking group on a consolidated basis, adequately monitoring and, as appropriate, applying prudential norms to all aspects of the business conducted by the group worldwide." Core Principle 25 declares that "[c]ross-border consolidated supervision requires cooperation and information exchange between home supervisors and the various other supervisors involved, primarily host banking supervisors. Banking supervisors must require the local operations of foreign banks to be conducted to the same standards as those required of domestic institutions. "

In essence, home country supervisors are responsible for consolidated supervision and host country supervisors are responsible for supervision on an individual or sub consolidated basis for entities operating in their country (see Box 1). Also, responsibility for the supervision of a branch with respect to solvency lies primarily with the home supervisor. On the other hand, the responsibility with respect to the supervision of liquidity on the other hand usually resides with the host supervisor. To exercise consolidated supervision of a cross border financial group, the home supervisor thus must cooperate with its counterparts in other jurisdictions to help ensure the safety and soundness of the group concerned. The Core Principles also require that the home supervisor inform the host of any significant problems that arise in the parent or head office. In practice, this cooperation has mainly been supported by the establishment of non binding memoranda of understanding (MOU) and supervisory colleges between home and host supervisors.

[5] Basel Committee (2006b).The Basel Committee has announced that the Core Principles will be updated to take into account the lessons learnt and new regulations issued since the global financial crisis (Wellink, 2011). The Financial Stability Board (FSB) has made specific recommendations for this review in its report on "*Intensity and Effectiveness of SIFI Supervision*" issued in November 2010 (FSB 2010b).

Importantly, the division of supervisory responsibilities between different countries is not necessarily consistent with the division of responsibilities relating to crisis management and resolution, including the provision of the lender of last resort function.

Box 1: An Historical Perspective on the Efforts of the Basel Committee on Cross Border Supervision

The efforts of the Committee in the area of cooperation among supervisors in cross border supervision go back to 1975 with the publication of the "*Concordat*" or the "*Report on the Supervision of Bank's Foreign Establishments*" (Basel Committee 1975). In May 1983 the "*Principles for the Supervision of Bank's Foreign Establishments*" (Basel Committee 1983) replaced the "*Concordat"* and reformulated some of its provisions, particularly to take account of the subsequent acceptance of the principle that banking supervisory authorities cannot be fully satisfied about the soundness of individual banks unless they can examine the totality of each bank's business worldwide on a consolidated basis. In 1992, the *"Minimum Standards for the Supervision of International Banking Groups and their Cross-Border Establishments"* (Basel Committee 1992) were released so as to define more clearly how the 1983 update of the *"Concordat"* was to be implemented in practice. Two basic principles have governed the Basel Committee's efforts. First, no foreign banking establishment should escape supervision. Second, the supervision of the foreign establishment should be adequate. Hence, the home supervisors as well as the host supervisor should explicitly approve the establishment abroad. In 1996, another report on "*Supervision of Cross Border Banking"* was released by the Basel Committee. This report lists a number of recommendations aimed at removing obstacles to the implementation of effective consolidated supervision. The cross border supervisory framework of the Basel Committee was further reinforced in May 2001 with the release of *"Essential Elements of a Statement of Cooperation between Banking Supervisors"* (Basel Committee 2001). This publication sets out essential elements in the areas of sharing information, onsite inspections, protection of information, and ongoing coordination.

Basel II stressed the need for cooperation among supervisors because it is applied at each level of the banking group, so that there is a technical requirement on the part of both home country and host country supervisors to provide a Pillar 1 and Pillar 2[1] assessment. In 2003, the Basel Committee released the *"High-Level Principles for the Cross Border Implementation of the New Accord"* (Basel Committee 2003). This document does not change the assignment of supervisory responsibility of the "*Concordat"* but it complements it by introducing six principles specifically related to Basel II implementation. These six principles cover the following areas

1. The lack of change in the current supervisory task-sharing;
2. The responsibility of the home supervisor;
3. The specific requirements of host supervisors;
4. The enhanced and pragmatic coordination led by the home supervisor;
5. The avoidance of redundant and uncoordinated approval and validation work;
6. The communication with the relevant bank.

In 2006, these principles were strengthened by *"Home Host Information Sharing for Effective Basel II Implementation"* (Basel Committee 2006a), a report that focuses on information sharing processes specifically related to Basel II. This report provides guidance as well as specific examples of information that host supervisors might need to refer to for sound Basel II implementation.

[1] The Basel II Framework consists of three mutually reinforcing pillars. Pillar 1 sets out the revised minimum capital requirements that will be based on a charge for each of the main risk types (credit risk, market risk and operational risk). Pillar 2 establishes international guidelines for the supervisory review process that complement the Pillar 1 minimum requirements. In effect, this is an acknowledgment that the capital calculations under Pillar 1 will never fully capture the risk profile of individual institutions, and that supervisors must therefore use their supervisory process to address this shortcoming. Pillar 3 represents a range of increased disclosure requirements.

2. *Experience with the Current Supervisory Arrangements during the Global Financial Crisis*

The financial crisis has illustrated the boundaries of international supervisory cooperation by showing that national interests become crucial when the supervised institution enters into serious difficulty and must be resolved. Indeed, effective home and host cooperation was virtually absent in the resolution of the Lehman Brothers subsidiaries outside of the United States. The holding company filed for bankruptcy and Lehman's broker dealer operations were merged with Barclays Capital. This created chaos abroad, particularly in the United Kingdom where Lehman's subsidiaries also had to file for bankruptcy. Likewise, many savers in the EU deposited their money with Icelandic banks. In violation of agreements of the European Economic Area (EAA)[6], Iceland protected only Icelandic depositors and failed to cooperate with foreign supervisory and resolution authorities. Many host countries paid their domestic savers for political reasons, outside of multilateral agreements for deposit protection.

From the perspective of the host supervisor, there are six fundamental reasons explaining the lack of effective cooperation.

The first, and most recognized reason, is the focus of the current supervisory arrangements on ongoing supervision and the lack of an effective mechanism to resolve failing financial institutions that are active in multiple jurisdictions.[7] An effective resolution regime should be able to minimize the systemic damage caused by an orderly collapse without exposing the taxpayer to the risk of loss. To do this, the regime must provide authorities with the tools to safely and quickly ensure the continued performance of the bank's essential functions, including uninterrupted access of depositors to their funds wherever they are located, and to transfer and sell viable portions of the bank. The current sector specific and nationally based resolution regimes are fragmented and at odds with the way in which internationally active banks and conglomerates operate. Institutions and markets have evolved, but the harmonization of frameworks for resolving internationally active financial institutions has not kept pace.

Second, the implementation of the current supervisory arrangements for cross border supervision favors home country supervisors by giving them a leading role. In some particular scenarios, host countries of systemically relevant foreign institutions with integrated cross border funding and liquidity functions or countries where large parts of the financial system are owned by international banking groups remain subject to the goodwill of the home supervisor to provide timely, accurate and comprehensive information on the financial condition of the banking group. Pistor (2010) argues that the Basel *Concordat* is primarily concerned with risks emanating from a host country's failure to properly supervise a subsidiary to the parent company and its home supervisor. Pistor states that the *Concordat* does not address the now common opposite scenario where host countries are exposed to supervisory failure by the home country. Her findings are confirmed and illustrated in section 4 of this paper.

[6] The European Economic Area was established on 1 January 1994 following an agreement between the member states of the European Free Trade Association (EFTA) and the European Union. Specifically, it allows Iceland, Liechtenstein and Norway to participate in the EU internal market without a conventional EU membership. In exchange, they are obliged to adopt all EU legislation related to the single market, except laws on agriculture and fisheries.

[7] An ex-ante burden sharing mechanism is also not in place. This is basically a credible pre-commitment between countries to address a cross-border bank failure where countries agree in advance to share the financial burden of a rescue when the systemic impact of the failure would exceed the cost of recapitalization.

Third, the current supervisory arrangements for cross border supervision do not address the inherent flaws in structural incentives between home and host supervisors. More specifically, there are no mechanisms to persuade individual or groups of regulators to cooperate in accordance with their assigned cross border supervisory responsibility. Assembling home and host supervisors in a supervisory college with a good practice guide is not enough to make them partners with the common objective of effective cross border banking supervision.

Fourth, and closely linked to the previous observation, is the lack of accountability or sanctions if supervisory cooperation does not take place or is not in accordance with good practice. There are credible accountability arrangements at the domestic level for many individual supervisory authorities, but when their supervisory actions or decisions have a cross border impact, these effects are simply not taken into account. There are, however, some mechanisms to provide external monitoring of domestic regulatory and supervisory frameworks. Examples include the Basel Core Principles (BCP) assessments performed by the International Monetary Fund (IMF) and the World Bank as a stand-alone *"Report on the Observance of Standards and Codes"* (ROSC) or as part of the Financial Sector Assessment Program (FSAP). Under the BCP assessments, external experts assess compliance with the 25 Basel Core Principles by regulatory agencies in countries worldwide, with the objective of evaluating the quality of regulatory and supervisory frameworks. Additionally, the recently established "peer" reviews by the Financial Stability Board could relatively easily be used in this area (FSB 2010a). The FSB member jurisdictions have committed to undergo both thematic and country peer reviews. That said, the devil is in the detail of information sharing and it remains to be seen if enough time and resources will be committed to these initiatives to ensure adequate scope and depth in the assessments of cross border supervision practices.

Fifth, the absence of a mediation and/or conflict resolution mechanism combined with the leading role for the home supervisor leaves host supervisors with no bargaining power and nobody to turn to when disagreements arise. There are no mechanisms to resolve conflicts other than by negotiation and mutual cooperation with the home supervisor.

Sixth, policy makers have not yet addressed the interactions between the five fundamental shortcomings above. For example, the absence of an international resolution regime and an ex ante burden-sharing mechanism has the potential to hamper supervisory cooperation of international financial institutions (Rosgeren 2007; Claessens, Herring and Schoenmaker 2010). While the current supervisory cooperation model led by the home supervisor could be effective as long as the banking group performs well, the dominant national interests have the potential to lead to a quick dry up of information flows or outright misreporting as the health of the banking group deteriorates and resolution becomes more probable.

A simple example will clarify. Consider an integrated banking group with centralized liquidity, capital and funding management, facing serious liquidity problems in the home country. If the home supervisor informs the host supervisor of the threat, the latter will want to protect his local depositors from the problems of the parent. The emergency measures taken by authorities in one host country, commonly referred to as ring-fencing measures, will then increase stress on the banking group's legal entities in other jurisdictions and on the banking group as a whole. Hence, in some cases, early remedial action and supervisory information sharing may increase the probability of further distress and complicate crisis management. Working backward, this scenario demonstrates that the absence of an ex ante clear resolution and burden-sharing mechanism incites the host supervisor to take immediate action and hence can impede the effectiveness of preventative cross border supervision.

The objective of supervisory task-sharing arrangements should be that supervisors of internationally active cross border banks work closely together as partners to achieve effectively supervised cross border banking groups. Hence, supervisory arrangements and practices should be tailored to ensure that conflicts of interest resulting from distortions in incentives are properly addressed. The next section explores the rather wide range of existing challenges and incentive problems in the supervision of cross border banks.

III. Incentive Problems in Domestic and Cross Border Banking Supervision

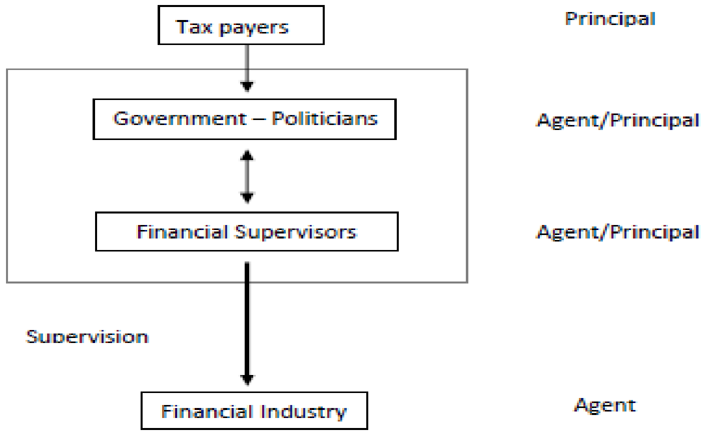
To analyze challenges and incentive problems in cross border banking supervision, two topics in the existing literature will be reviewed. The first deals with incentive problems in banking supervision, generally analyzed in a single country setting. The second deals with cross border externalities.

1. Single Country Setting

The principal-agent framework is widely used in the literature to explain the incentive conflicts resulting in regulatory failure[8]. In the principal-agent model, a task is delegated by the principal to the agent. For banking supervision, Dijkstra (2010) described and portrayed the various principal-agent relationships that can be identified resulting in the regulator playing the role of both agent and principal (figure 1). First, the tax payers or society can be seen as the main principal. Individual members deal with financial institutions and have the task of supervising their actions. However, they lack the time and particularly the expertise to monitor their financial institution counterparts adequately and comprehensively. This task is therefore delegated to the government, making the latter the agent of the tax payers. The government itself then frequently delegates the task to a specialized agency. That agency becomes the agent of both society and the government. To achieve its objectives, the agency will then impose prudential regulation on the financial industry, thus becoming the principal of the industry.

[8] See Kane (1989a) and Kane (1989b). Kane(1990) analyzes the principal-agent problems in the resolution of the Savings & Loans crisis in the US. Kane (1997) suggests various measures to align public and private incentives. In Kane (2002) a scheme of forfeitable deferred compensation for heads of deposit insurers so as to align incentives is recommended.

Figure 1: Principal-Agent Relation in Banking Supervision



Source: Dijkstra 2010, p 118.

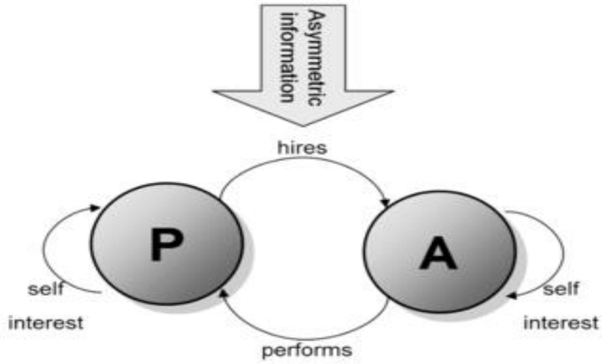
A contract aligning the incentives of the agent to those of the principal should be in place (Jensen and Meckling, 1976). In practice, this contract should be characterized by clear objectives of the supervisory agencies, generally outlined in laws, and by the accountability of the agency to politicians, who are elected by the principals.

However, the delegation of the task to the government and then to the agency will inherently lead to information asymmetry[9]. In most circumstances, market participants find ways to mitigate this information asymmetry: for example the principal can monitor the agent. In the case of prudential supervision, the task may well be too complex to be monitored effectively by the principal. This complexity arises from the very specialized skills as well as vast amounts of data necessary to conduct banking supervision. Additionally, clear objectives for supervisory agencies are hard to define as prudential regulation should not, and cannot, guarantee a zero failure rate. Many confidentiality concerns also arise for prudential supervisors when dealing with individual banks. As a result of information asymmetry, confidentiality and complexity, agents have quite a bit of discretion to follow their own interests or goals other than the interest of the principal (figure 2). The question then to be raised is: Are there any conflicting goals between society, government, and prudential supervisors? Intuitively, one would expect that all parties would share an interest in a stable and sound financial system.

[9] For example, most relevant information is known only to the supervisory agency. Prudential supervisors receive confidential and propriety information from supervised institutions which they do not share with the government. This creates information asymmetry.

Figure 2

The Principal – Agent Problem[10]



Source: www.ask/wiki/principal_agent_problem

Dijkstra (2010) finds that politicians and bureaucrats do not necessarily follow the national interest because each will act in an opportunistic way to maximize his or her own economic benefits such as salary, public reputation and power. Shueler (2003) describes this notion as "bureaucratic self capture", meaning that regulators will act to protect their own careers or reputation for example by disguising poor performance by their agency (see also Goodhardt 1996; Mishkin 2001).

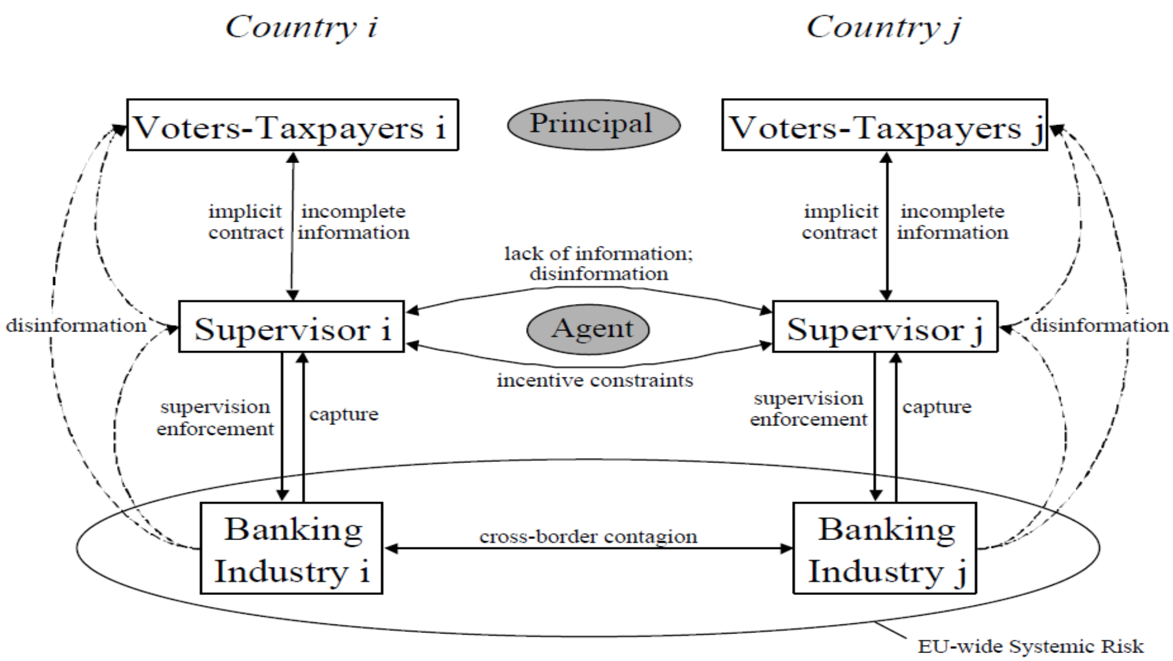
They will also act in favor of persons who have the potential to strongly influence their careers - namely banks, or politicians or both. The result can be industry capture and political capture, respectively. Industry capture happens when regulators act in the interest of their domestic commercial banks and promote the interests of the financial industry over those of the public. Political capture is the promotion of the interests of politicians by regulators. A recent example was the clear interest of the U.S. government, and hence regulators, to support and maintain securitization to provide credit to the less credit worthy. Another example is the pressure on regulators by governments not to close a bank as bank closures are particularly unpopular with the bank customers and always come at a cost. Industry and political capture can materialize in exercising regulatory forbearance, poor supervisory and enforcement practices and lax regulations. (Buiter 2008)

In summary, in a single-country setting, information asymmetries can cause opportunistic behavior, such as self-capture, political capture, and/or industry capture. The result can be regulatory forbearance, lax regulations and macro policies driven by politicians.

2. Multiple Country Setting

The additional cross border dimension of the principal-agent problem crystallizes in the fact that national regulatory authorities do not take cross border externalities into account. Much of the literature in this regard focuses on the European Union, but the conclusions remain equally valid in the international context. Stolz (2002) reviews the optimal design of banking supervision when there is cross border lending. She demonstrates that supervisors who are accountable only to their own jurisdiction will not take cross border effects into account. Shuler (2003) incorporates the externality problem into a principal-agent framework thereby focusing on the conflict of interest between taxpayers as principals and the bank supervisors as agents in the EU. The vertical dimension focuses on the "traditional" principal-agent relationship in a particular jurisdiction. In addition, Schueler describes an international or horizontal dimension including the disregard by national prudential supervisors of negative externalities in another country affecting other banks or the economy in general from the failure of a bank (figure 3).

Figure 3 : Incentive Problems in Cross Border Banking Supervision

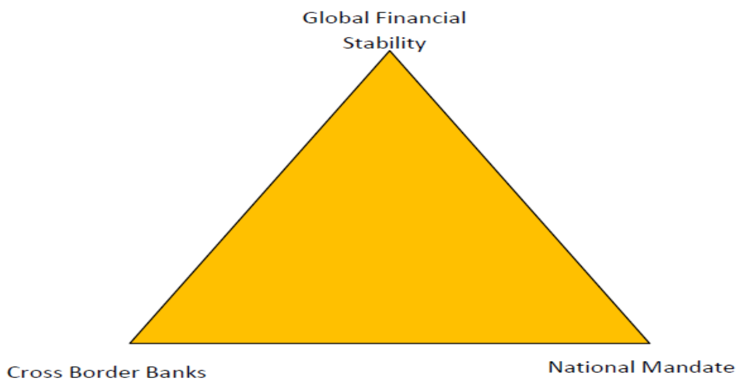


Source: Schueler 2003, p. 9

Typically, the objectives of a supervisory agency will include safeguarding and protecting the domestic financial system and minimizing the fiscal cost of recapitalization or insolvency to domestic taxpayers. Schoenmaker and Oosterloo (2005) also find that national authorities in a European Union context will take into account only those externalities in their own jurisdiction and will ignore externalities in a cross border context.

As an illustration, Claessens, Herring and Schoenmaker (2010) have described this conflict in incentives, and ultimately accountability, in more general terms as the “financial trilemma” involving the three policy objectives - preserving national resolution authority, fostering cross-border financial integration and maintaining global financial stability – cannot be attained (figure 4). Any two objectives can be dealt with relatively easily but achieving all three simultaneously is extremely difficult. The financial trilemma can also be applied to ongoing banking supervision where the national mandate corner reflects the protection of depositors instead of the national resolution authority. Indeed, the problem of the financial trilemma boils down to sovereignty. The global financial system is integrated but the protection of global financial stability is not part of the mandate of any supervisory agency involved in cross border banking supervision.

Figure 4 : The Financial Trilemma



Source: Claessens, Herring and Schoenmaker (2010), p. 33

In a nutshell, one can conclude that there are two broad forces working against timely, reliable, and effective information flows between supervisors and ultimately against effective cross border consolidated supervision.

First, there are the information asymmetry problems resulting in self-capture, industry capture and political capture at the purely domestic level. These obstacles will be amplified in a cross border context as they will arise at the level of each domestic regulator involved in the supervisory cooperation. For example, supervisory authorities have the additional implicit - but sometimes explicit - objective of defending and promoting their national industries (Bini Smaghi 2008). To some extent, this results in competition among supervisory national agencies which has the potential to affect their regulatory and oversight tasks. This type of competition can result in regulatory laxity, or a race to the bottom in the extreme case, as there is an incentive to reduce the level of regulation and the rigor of supervision to attract the financial industry (Dell Ariccia and Marquez 2001). In some cases, this attitude is even set in stone in the mandate of the prudential supervisor requiring it to contribute to or maintain the development of the domestic market as a financial center[11].

Second, supervisors do not take into account the externalities in the other jurisdictions. History has demonstrated over and over again that this occurs at the macro level as well as at the institutional level. At the macro level in the early 2000s home supervisors showed little concern for the systemic effects of the rapid credit growth driven by their international banks on the financial stability in central and eastern Europe (Pistor 2010). From a home country perspective there was clearly no reason for concern; banks

[11] For example, in Switzerland, the Federal Act of 22 June 2007 on the Swiss Financial Market Supervisory Authority (Financial Market Supervision Act, FINMASA) states in Article 5 that "In accordance with the financial market acts, financial market supervision has the objective of protecting creditors, investors, and insured persons as well as ensuring the proper functioning of the financial market. It thus contributes to sustaining the reputation and competitiveness of Switzerland's financial centre". Similarly, in the United Kingdom one of the "Principles of Good Regulation" on the former Financial Services Authority Website stated "The international character of financial services and markets and the desirability of maintaining the competitive position of the UK". See http://www.fsa.gov.uk/Pages/about/aims/principles/index.shtml

were well diversified and the region was a major growth market. For the host country's perspective however, a credit bust was developing.

At an institutional level, the home supervisor may not report, or may misreport or delay reporting supervisory information to the host supervisor, resulting in issues with regard to timeliness and relevance of information shared in a college. The more subjective nature of the information ("soft information") shared among supervisors, particularly supervisory risk assessments, makes delays and manipulation relatively easy (Holthausen & Ronde 2004). For example, a host supervisor may be inclined to inflate its risk assessment and require a higher capital buffer with the objective of encouraging the banking group to provide additional capital or resources to the foreign operations. Likewise, a home supervisor may understate the risks with the objective of avoiding sudden ring-fencing decisions by the host supervisors.

On top of those two broad forces, several other factors exacerbate the obstacles to effective cross border cooperation.

- *Conflicts arising from differing mandates and differing tolerance for failure*

Individual authorities have different mandates and value financial stability differently. In a less developed country, regulators are more attentive to financial inclusion and issue regulations that may seem rather lax to others. In countries with well-diversified real economies supervisory authorities may well be prepared to allow banks to take more risk domestically than countries where the financial sector represents a multiple of its GDP. Also, attitudes toward bank failures can be very different. Goldstein and Vernon (2011, p. 7) state that "it is common among European policymakers to see bank failures as politically ominous disasters to be avoided at all costs, even in the case of relatively small banks. It is also often asserted that the US is more tolerant towards corporate insolvency than most European cultures and that the US bankruptcy code, at least when applied to nonfinancial companies, is comparatively more protective of corporate executives and employees than most European counterparts."

- *Confidentiality concerns*

Supervisors can be reluctant to share information as the news may leak, causing a deposit run or a liquidity crisis. Indeed, not every country has sound professional secrecy laws and supervisors will want to ensure that the exchange of information is for the purpose of performing the supervisory task of the authorities or bodies receiving the information. Memoranda of understanding (MOUs) can only address this matter to some extent as they are non binding and non enforceable contracts that are more akin to statements of intent. Enria & Vesala (2003) found that MOUs do not resolve the incentive problems between home and host supervisors. Likewise, Holthausen & Ronde (2004) also find that they are not sufficient to ensure a complete flow of information between supervisors.

- *Legal constraints*

Some supervisors still lack the legal authority to share information with foreign counterparts or can only share information under certain conditions. In Poland for example, the banking law states that information can be shared if it "is in Poland's national interest"[12]. Similarly, many supervisors are allowed to share information with other banking supervisors but not necessarily with resolution authorities or other

[12] Polish Banking Act Article 131 paragraph 3

sectoral supervisors in other countries. Also, the onward disclosure of information obtained from a banking supervisor is frequently restricted, or may require explicit approval from the authority that originally produced it. In times of crisis, this may raise numerous practical issues for a supervisory college and for the newly established Cross Border Crisis Management Groups (see section 5)

- *Lack of a common terminology, legal framework and prudential reporting systems*

There is no generally accepted supervisory assessment framework or a "universal" supervisory language. What constitutes “low risk” for one agency may well be medium or even high risk in another legal and regulatory environment. Differing regulatory and enforcement frameworks can equally lead to situations where the requirements of the home supervisor conflict with the stipulations of the host supervisor. The divergence in prudential reporting systems can also interfere with the timely compilation of data.

- *Constraints on the capacity of supervisory agencies and doubts about the quality of supervision*

Herring (2007) identifies two additional asymmetries that will directly impact the quality of supervision. The first is asymmetry in resources. Supervisory agencies differ greatly in terms of the number and quality of employees. The second is asymmetry in financial or legal infrastructure; for example weaknesses in accounting standards, the quality of external audits or inefficient or corrupt judicial procedures. Differences in supervisory architecture and governance will also lead to asymmetries between home and host supervisors. These factors all act as constraints on the capacity of supervisory agencies, and may result in doubts about the quality of supervision. It is evident that the quality of cross border supervision is determined by its weakest link.

- *Geographic risk profile of the banking group*

In accordance with the principles of cross border consolidated supervision by the home supervisor, incentives to share information during supervision will also be impacted by the geographic structure of the banking group or asymmetries in risk exposures (Herring 2007). In particular, differing perspectives between the host and the home supervisor on whether the bank is systemically important in either or both jurisdictions and whether the foreign operations are economically significant for the banking group can create conflicts and influence willingness to share information. Herring (2007) has detailed these challenges arising from these asymmetries in the incentive structure between the host and the home supervisor to share information and collaborate. He distinguishes three dimensions linked to the geographical risk profile of the banking group:

- Whether the parent bank is considered to be of systemic importance in the home country
- Whether the foreign operations are of significance to the solvency of the parent bank; and
- Whether the foreign operations are systemically important in the host country,

The resulting conflicts are represented schematically in the table 1. The first two dimensions are listed in the columns and the last dimension in the rows.

Table 1 : Incentives for Information Sharing from the Perspective of the Home and the Host Supervisor

Parent Bank				
Host country entity	**Systemic** in home country		**Non systemic** in home country	
	Foreign operations **significant** to parent	Foreign operations **insignificant** to parent	Foreign operations **significant** to parent	Foreign operations **insignificant** to parent
Systemic	(a) High priority for both	(b) High priority for host	(c) High priority for host	(d) High priority for host
Non systemic	(e) High priority for home	(f) Low priority for both	(g) Low priority for both	(h) Low priority for both

Source: Herring (2007) p. 15

From the home country perspective, the most challenging situations occur where the foreign operations are not regarded as systemically important by the host country but are a significant part of a systemically important bank in the home country (case e). From the host country perspective, cases (b) and particularly (d) are the most challenging. These situations arise most frequently in Africa, central and eastern Europe and Latin America.

- *The stage of supervision*

Rosengren (2007) as well as Claessens, Herring and Schoenmaker (2010) have found that incentives between home and host supervisors get magnified as problems get worse. Hence, divergences between these sets of incentives will also get magnified. As a consequence, incentives for communication and cooperation will further diminish as the health of the bank deteriorates because each jurisdiction will give priority to addressing its own problems and will not communicate with others.

The analysis developed in the next section builds on the work done by Herring (2007) but takes into account this time dimension as reflected in the stage of supervision. It also analysis the conflicts in incentives in three scenarios: preventative supervision, deterioration in the health of the parent bank and deterioration in the health of the subsidiary bank.

IV. A Schematic Presentation of Supervisory Incentives for Information Sharing

Consider an integrated banking group with centralized liquidity, capital and risk management where the subsidiary is dependent on the parent bank for capital, funding and liquidity. The banking group has a home and a host supervisor, which also act as agents to their respective governments. Assume that this is a systemically important bank in the home country. The consolidated banking group is headed by the parent bank and the consolidated banking group is supervised by the home supervisor. [13]

[13] Annex A shows the analysis in this section in more general terms.

Let's assume that the incentives for the home supervisor to share information can take three possible forms:

1. "SHARE": openly share accurate and timely information on the health of the parent bank and banking group;
2. "MINIMIZE AND DELAY": minimizing and delaying genuine concerns; or
3. "NO INCENTIVE": no clear and strong incentive to share information.

We assume the incentives for the host supervisor to share information with the home supervisor can take four mutually exclusive forms:

1. "SHARE": openly share accurate and timely information on the health of the subsidiary bank;
2. "RING-FENCE": there is a strong incentive to ring-fence;
3. "OVERSTATE CONCERNS": overstating concerns about the health of the subsidiary; or
4. "NO INCENTIVE": no clear and strong incentive to share information. [14]

Furthermore, the host supervisor can combine ring-fencing with the sharing of accurate and timely information and with overstating concerns about the health of the subsidiary.

1. *Analysis of the Prevention Stage*

Figure 5 below shows that the extent of information host supervisors receive from the home supervisor depends on the materiality of the foreign operations as part of the banking group. When the foreign operations are not material to the banking group, there is no incentive for the home supervisor to share information. Figure 6 depicts the information sharing incentives from host supervisors to home supervisors and shows that these are lower when the operations are not systemic in the host country.

Figure 5: Prevention stage
Incentives for the home supervisor to share information with the host supervisor

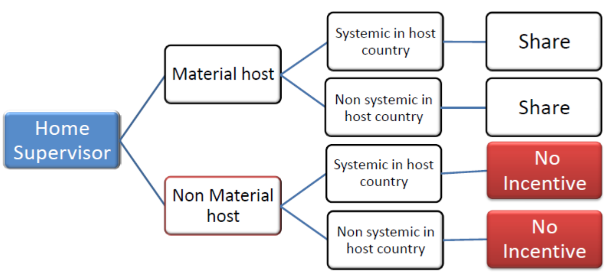
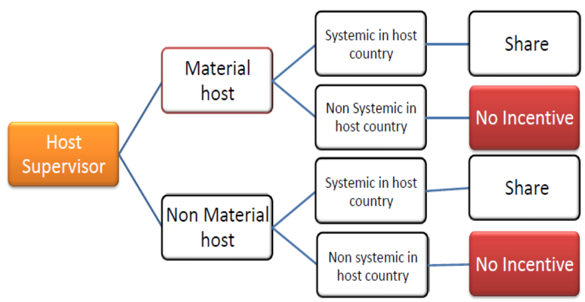


Figure 6: Prevention stage
Incentives for the host supervisor to share information with the home supervisor



Source: Author

[14] The supervisory authority will still have an incentive to take action domestically, but if the operations are not systemic in the host country, the supervisory intensity will generally be lower and it is likely the authority will take a more balanced approach towards the cost of sharing information (attending colleges etc) than in the case where the operations were systemic.

From Figure 5 and 6, the following conclusions can be drawn:

- Home to host incentives for information sharing decrease with the materiality of the host operations to the group operations.
- Host to home incentives for information sharing increase as the operations in the host country become more systemic.

Putting both graphs together, the only instance where home supervisor and host supervisor have a strong incentive to openly share accurate and timely information is in the case a material host and systemic foreign operations in the host country.

2. *Analysis of the Remedial Stage*

- *Deteriorating Health of the Parent Bank*

When problems occur at the parent bank, home and host incentives conflict in every instance (figure 7 and 8). The effects of a potential failure of the bank now make the home supervisor give priority to its local stakeholders and the national interest. Hence, the home supervisor has incentives to delay, deny and minimize the relevance or significance of its concerns and potential remedial actions so as to avoid ring-fencing, particularly in the case where the foreign operations are material to the banking group. The host supervisor now has incentives to ring-fence. In the absence of a resolution mechanism or an ex ante burden-sharing agreement, it is likely that this conflict in incentives will escalate and supervisory cooperation will break down.

Figure 7: Problems in the parent bank: Incentives for the home supervisor to share information with the host supervisor

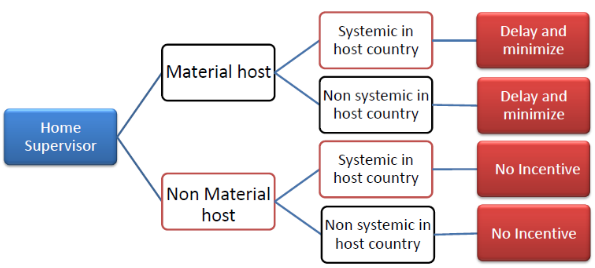
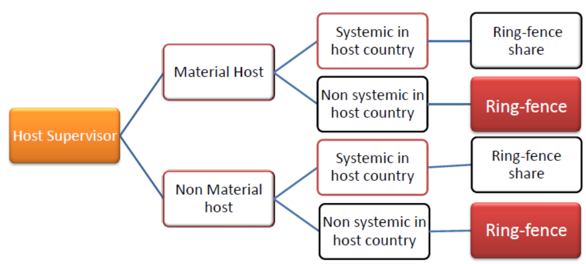


Figure 8: Problems in the parent bank: Incentives for the host supervisor to share information with the home supervisor



Source: Author

From Figure 7 and 8, when the health of the parent deteriorates, the following conclusions can be drawn:

- The home supervisor's incentives to minimize and delay information sharing regarding his concerns become more important when the host operations are material to the overall banking group.
- The host supervisor's incentives to share information increase as the operations become more systemic in the host jurisdiction. The host supervisor now has stronger incentives to ring-fence in all situations.

Putting both graphs together, there is no instance where the home supervisor and host supervisor have a strong incentive to openly share accurate and timely information. This finding is particularly important for host supervisors of banking systems that are dominated by foreign banks.

- *Deteriorating Health of the Subsidiary*

In the scenario where the problems occur in a systemically important subsidiary, the host supervisor has an incentive to overstate concerns to the home supervisor so as to attract attention (and capital or liquidity). At the same time, even if problems occur in the subsidiary, the host supervisor still keeps an incentive to ring-fence the assets he can save.

Figure 9:Problems in the subsidiary bank: Incentives for the home supervisor to share information with the host supervisor

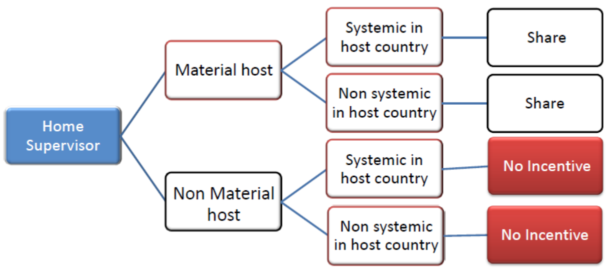
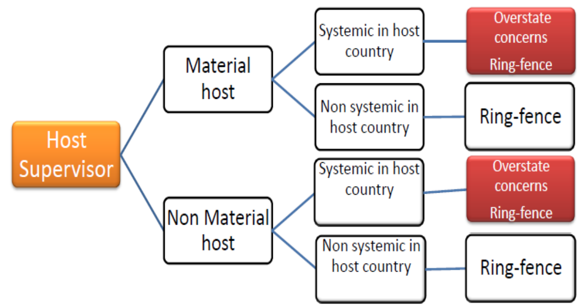


Figure 10: Problems in the subsidiary bank: Incentives for the host supervisor to share information with the home supervisor



Source: Author

From Figure 9 and 10, the following conclusions can be drawn:

- The home supervisor's incentives decrease with the materiality of the host operations to the banking group operations.
- The host supervisor's incentives to overstate problems increase as the operations in the host jurisdiction become more systemic (and less material to the group).

Putting both graphs together, there are no instances where the home supervisor and host supervisor have strong incentives to openly share accurate and timely information.

V. Policy Options to Address the Incentive Problems in Cross Border Supervision

It is widely recognized that the incentive conflicts between home and host supervisors cannot be easily resolved, particularly those emerging from the international nature of banking groups and the national nature of supervisory frameworks. Thus it is all the more remarkable that since the global financial crisis so little attention and consideration have been devoted to the development of policies to remedy the instances where a supervisory agency's incentives are in outright conflict with the need to cooperate.

A number of policy options to address conflicts of interest between home and host supervisors have been under discussion. They can broadly be divided into three non-mutually exclusive strands. The first strand focuses on the improvement of supervisory cooperation, mainly through the establishment and operations of supervisory colleges. This group of measures has broad political and supervisory support from the G20 and the Financial Stability Board. The second strand includes ring-fencing and the subsidiarization model. The third strand, the ideal option, is the establishment of a framework providing a binding code of conduct across nations (IMF, 2009). This option is probably unachievable in the medium term. As a more pragmatic intermediate option, this paper proposes a fourth strand, consisting of better oversight of supervisory colleges while a more long-term solution is developed.

1. *Improved Cooperation through Supervisory Colleges*

One important tool for supervisors to share supervisory information on cross border banking groups among supervisors consists of "supervisory colleges". These are groups of supervisors with the primary objective of exchanging information and establishing a dialogue in order to ensure that they are able to identify and address the main risks across a banking group. The information in supervisory colleges is shared on a voluntary and confidential basis. Importantly, supervisory colleges are neither decision making bodies nor supranational agencies. Hence the participation in a supervisory college does not limit a supervisory agency's regulatory or supervisory powers, meaning that any participant can still take unilateral action.

Supervisors have formed supervisory colleges since the 1980s. A college of supervisors was in place for the Bank of Credit and Commerce International (BCCI). Supervisory colleges were also relatively widespread and active during the Basel II implementation as was recognized by the Basel Committee in its 2006 paper *Home-Host Information Sharing for Effective Basel II Implementation*[15]. Nonetheless, the global financial crisis has brought supervisory colleges in the spotlight, particularly since the G-20 noted the importance of the use of colleges to enhance supervisory cooperation related to global banks[16]. The G-20 also tasked the FSB to "set guidelines for, and support the establishment, functioning of, and participation in, supervisory colleges, including through ongoing identification of the most systemically important cross border firms."[17] The FSB recommended that the use of international colleges of supervisors be expanded so that a college exists for each of the largest global financial institutions. A list of cross border financial groups identified as needing college arrangements was developed but not published by the FSB[18]. Since the crisis, very good progress has been made as core supervisory colleges have been in operation since 2009 for the more than 30 large complex financial institutions identified by the FSB as needing college arrangements.

In response to the G-20 request for guidelines and support of the functioning of supervisory colleges, the Basel Committee released a paper on "*Good Practice Principles on Supervisory Colleges*" in October 2010[19]. The proposed good practice principles are designed to help both home and host supervisors ensure that supervisory colleges work as effectively as possible by outlining expectations in relation to college objectives, governance, communication and information sharing.

---

[15] Basel Committee (2006a)
[19] At the November 2008 Washington D.C. summit, the G-20 noted the importance of the use of supervisory colleges to enhance supervisory cooperation in its communiqué. In March 2009, the G-20 emphasized the use of supervisory colleges again in the London communiqué. At the 2009 Pittsburgh summit, the G-20 noted the substantial progress achieved in establishing supervisory colleges and reinforcing cooperation among supervisors.
[17] G-20 Declaration, Strengthening the Financial System London Summit 1 (April 2,2009)
[18] The Financial Times however published such as list in November 2009. The following institutions were mentioned: Goldman Sachs, JP Morgan Chase, Morgan Stanley, Bank of America Merrill Lynch, Citigroup, Royal Bank of Canada, HSBC, Barclays, Standard Chartered, UBS, Credit Suisse, Societe Generale, BNP Paribas, Santander, BBVA, Mizuho, Sumitomo, Mitsui, Nomura, Mitsubishi UFJ, Unicredit, Banca Intesa, Deutsche Bank and ING. In July 2011 the Basel Committee published the consultative document "Global systemically important banks: Assessment methodology and additional loss absorbency requirement"
[19] Basel Committee (2010a)

As outlined in this paper and in accordance with the supervisory task-sharing, the home supervisor is responsible for designing the structure, membership and operational arrangements of a supervisory college. Supervisory colleges are generally aligned with the risk profile and geographic penetration of the supervised institution. A wide variety in college structures has emerged. Many colleges have tiered structures consisting of a core college containing a limited number of supervisors, a regional college and a general college containing a wider range of host supervisors. Alternative structures also exist, including a separate college by business line (for example, for the trading book or internet banking). Some colleges have also established working groups to focus on specific issues, such as liquidity management across the banking group. There is broad consensus among supervisors that the flexibility in the design of college structures and their composition ("variable geometric approach") is essential and that it would not be appropriate to prescribe specific college structures.

The home supervisor also decides on the frequency and modalities of the meetings, sets the agenda and chairs the meetings. The home supervisor has ample discretion in these administrative decisions as there are no formal legal, accountability, conflict or appeal arrangements governing international supervisory colleges. The decisions by the home supervisor can affect the effectiveness of supervision by the host supervisor, as well as of supervisors not represented on the college. Should a host supervisor not be comfortable with the actions of (or the absence of actions by) the home supervisor, it could respond by bilateral or multilateral negotiation with the home supervisor or, ultimately, by the more extensive use of host country powers, for example by ring-fencing.

The home supervisor must also asses the legal ability of each participating supervisor to share information, as well as the assurance that the information remains confidential. These concerns have up to now been addressed by formal confidentiality arrangements such those contained in MOUs among college members. These are, however, not legal documents but statements of intent, which are not enforceable in court.

In October 2010, the FSB issued a paper *"Reducing the Moral Hazard Posed by Systemically Important Financial Institutions*" (FSB 2010c). The paper includes a requirement that for each globally systemic financial institution (G-SIFI), there should be an institution-specific cooperation agreement between relevant home and host authorities, to be negotiated within Cross Border Crisis Management Groups (CMGs). These agreements should provide for clarity as regards the roles and responsibilities of home and host authorities in planning for and managing the resolution of the institution. Further they should be underpinned by national law that provides both the mandate and the capacity to co-operate and share all relevant information among home and host supervisors, central banks and resolution authorities (paragraph 16). The CMGs would consist of all relevant central banks and resolution authorities as well as the authorities represented on the core supervisory college. The FSB also requires that all financial institutions be resolvable in an orderly manner and without solvency support from tax payers. Hence, recovery and resolution plans that assess the resolvability of the G-SIFI should be mandatory and a continuing exercise (paragraph 17).

The Basel Committee's good practice paper on supervisory colleges states that "supervisory colleges and crisis management groups are distinct but complementary (p.13)." Principle 7 includes the recommendation for the work of the banking group's supervisory college to serve as one of the building blocks for crisis management planning.

The composition and practices of supervisory colleges are confidential. However, the Basel Committee’s good practice paper states that the home supervisor should periodically notify host supervisors and the Basel Committee of the structure of the college and relevant participants. It remains unclear what is actually the objective of the notification to the Basel Committee. Over the summer of 2009, the Basel Committee performed a survey on college arrangements and practices in the banking sector. The International Association of Insurance Supervisors (IAIS) undertook a similar exercise in the insurance sector. Unlike the IAIS, the survey results for the banking sector were not published but formed the basis for the Basel Committee s good practices paper.

Box 2: Supervisory Colleges in the European Union

EU banks operate in a more closely integrated political and legal framework, and the extent of financial market integration and cross border banking is more developed than in the rest of the world. The state of affairs of supervisory colleges, and cross border supervision in general, in the EU is thus fundamentally different.

The EU also has a legally binding framework for home host cooperation among supervisors. This legal framework is implemented by a set of principles, guidelines and written agreements allowing common sharing and delegation of tasks, common risk assessments and conflict resolution processes. It includes exchange of information, cooperation in emerging situations and even some joint decision making. Indeed, Article 129 (3) of the revised Capital Requirements Directive requires that the consolidating supervisor (generally the home supervisor) and supervisors of subsidiaries involved in the supervision of a cross-border banking group do everything within their power to reach a joint decision on the application of the Pillar 2 provisions related to the Internal Capital Adequacy Assessment Process and to the Supervisory Review and Evaluation Process. The joint decision should cover the adequacy of the consolidated level of own funds held by the banking group with respect to its financial situation and risk profile, as well as the required level of own funds above the regulatory minimum, applied to each entity within the group. These tasks should be carried out within each college of supervisors established in accordance with the CRD and operating under the framework developed by the European Banking Authority (EBA).

Despite these arrangements being in place during the global financial crisis, in some instances national supervisors have still struggled to coordinate actions. An example is the case of Fortis[1]. In other cases, such as Dexia, joint solutions were reached. In the wake of the financial crisis, the EBA, and its predecessor agency the Committee of European Banking Supervisors (CEBS), have taken a pioneering role in promoting and enhancing cooperation by establishing good practice guidelines on the operational functioning of colleges. CEBS has strengthened its guidelines for the operational functioning of colleges and issued guidelines for the joint risk assessment and joint decision on the risk based capital adequacy. Also, EBA observers attend the meetings of supervisory colleges. In accordance with article 131a of the amended Capital Requirements Directive, all EEA cross border banking groups should now have a college of supervisors in place. In October 2010, CEBS published a detailed peer review. About 17 supervisory colleges were reviewed. Although much work is still to be done, the results were encouraging.

[1] The Benelux governments initially provided capital injections to their respective local Fortis banks. When this failed to calm the markets, the Dutch government bought the Dutch arm of Fortis, and the solvent Belgian and Luxembourg arms were sold to BNP Paribas.

The Basel Committee (2010) recommends that colleges "should facilitate effective crisis management by assisting in planning the crisis management meeting, encourage the banking group to produce appropriate information for crisis management and serving as a conduit for information sharing (p.13)".

A closer look at stages of banking supervision will help to better understand the complexity of the inter-linkages between supervisory colleges and Cross Border Crisis Management Groups (CMGs). Claessens Herring and Schoenmaker (2010) describe the three typical stages of banking supervision: prevention, remedial and resolution. The first or preventative stage consists of licensing procedures, ongoing supervision, such as inspections and off-site analysis, and taking disciplinary actions when required. In this stage, policy is developed and supervision is performed to address emerging risks. In the remedial stage, supervisors take actions in response to the problems that have emerged. This can include, improving risk management processes, removing managers and/or placing restrictions on activities or dividends. In the resolution stage, supervisory authorities deal with serious weaknesses and act in concert with central banks, the Ministry of Finance, resolution authorities and bankruptcy courts, if applicable. The instruments range from private sector solutions such as a takeover of a weak bank by another bank, restructuring and bankruptcy) to public sector solutions such as government provision of capital, lender of last resort facilities, nationalization).

Table 2: Stages of Supervision and the Role of Supervisory Colleges

	Stage of supervision		
	Prevention	***Remedial***	***Resolution***
Supervision of institutions	Licensing Ongoing supervision	Risk management changes Management changes Other restrictions	Private sector resolution Bankruptcy/restructuring Public sector resolution
Leading actors	***Supervisory Colleges***		(Supervisory college) Central bank Ministry of Finance Resolution authority Courts ***Crisis management groups***

Source: author based on Claessens, Herring and Schoenmaker (2010) p. 34

In reality, these three stages are more of a continuum and each prudential supervisor in a college will of course have its own definition and interpretation. Generally speaking, banking supervisors through supervisory colleges would play the leading role in the first and the second stage, but have a complementary and more supportive role in crisis management situations.

Claessens Herring and Schoenmaker (2010) correctly state that the tools in each stage are interrelated and should be considered collectively. So, the incentives to intervene early using the remedial measures will be driven by the perception of financial resources at risk from failing to take proper action (p.35). A similar view is expressed by the IMF (2010) when stating that "the existence of an effective resolution framework will likely enhance supervision and reduce the risk of "regulatory forbearance" by giving national authorities credible resolution options" (p. 6).

It is not clear if, and how, these inter-linkages between the stages of supervision and resolution are taken into account in the current policy debate which appears to either focus on crisis management and resolution regimes or on good practices for supervisory colleges. The recommendations produced do not yet provide workable and integrated solutions for real day-to-day supervision, where institutions' risk profile and business models evolve and supervision approaches vary between remedial action and prevention over time.

The Basel Committee's good practice paper provides valuable implementation guidance, particularly in the areas of information sharing, collaborative work and communication channels. It does not develop practices or policies to systematically mediate the fundamental underlying conflicts identified above, however. Although it touches upon crisis management groups, the good practice paper does not distinguish between the preventive and the remedial stage in supervision. With regard to the membership and structure of supervisory colleges, it is encouraging that the paper does identify the possible conflict of interest between the home supervisor and the host supervisor where the foreign operations are systemic to the host jurisdiction but not material to the banking group. It recommends the inclusion of such host supervisors in the colleges, but leaves it up to the home supervisor to decide if the inclusion is in the core or general college. Host supervisors will most likely question if this recommendation should not be stronger.

The vast amount of work done by the FSB and the Basel Committee in the area of cross border resolution and supervision should not blind one to the rather limited potential of supervisory colleges to effectively achieve their objectives. At the very best, they can only be seen as a "limited, incomplete response to the inadequate coordination of supervision of global financial institutions" (Alford, 2010, p.4-5). As long as national supervisors[20] are not given the mandate to take into account global financial stability concerns (or at least financial stability in other countries) and no internationally agreed resolution or burden-sharing mechanism exists, supervisory cooperation cannot be fully effective. An example of a broader mandate among supervisors can be found in Australia and New Zealand (see Box 3).

[20] The responsibility for domestic financial stability may also not lie with the supervisor but with the central bank. In some countries it is even not clear who is accountable for domestic financial stability.

Box 3: Australia and New Zealand Enhanced Mandate for Financial Stability

The New Zealand and Australian banking systems are amongst the most closely integrated in the world. Around 85 per cent of New Zealand banking system assets is Australian-owned, and New Zealand banking assets comprise around 15 per cent of total assets of Australian-owned banks. This high degree of trans-Tasman banking integration creates significant areas of common and overlapping interest between the Australian and New Zealand authorities. These interests are similar, as both countries seek to have sound and efficient financial systems that contribute fully to the performance of their economies. Moreover, the regulatory approaches in Australia and New Zealand are quite complementary and well-aligned. However, both countries worked on legal amendments and practical arrangements to address situations where national interests diverge. In particular, if a large bank got problems in one country or the other, there might be some differences of view as to how the authorities should respond, and who would be expected to bear the consequences.

In February 2005, the Australian Treasurer and the New Zealand Finance Minister established a Trans-Tasman Council on Banking Supervision as a major step towards the development of a single Trans-Tasman economic market in banking services. The Council is chaired jointly by the Secretaries to the Treasuries of Australia and New Zealand and also comprises senior officials from the Australian Prudential Regulation Authority (APRA), the Reserve Bank of Australia and the Reserve Bank of New Zealand (RBNZ). The Council's aims are to enhance cooperation and information sharing between respective supervisors on the supervision of Trans-Tasman banks; promote and regularly review Trans-Tasman crisis response preparedness relating to events that involve banks that are common to both countries; and guide the development of policy advice to both governments. The Council has initiated legislative changes in Australia and New Zealand required to ensure APRA and the RBNZ support each other in the performance of their current regulatory responsibilities at least regulatory cost.

The key elements of the legislative changes in both countries implemented are as follows:
· a general provision requiring each regulator to support the other in fulfilling its statutory objectives and, wherever reasonably possible, to avoid actions that could have a detrimental effect on financial system stability in the other country;
· a specific reference in the definition of `actions likely to have a detrimental effect to actions that interfere with or prevent the provision of outsourced services to a related party in the other country;
· a requirement that, where reasonably practicable, the regulators consult each other before exercising a power that is likely to have a detrimental effect on financial system stability in the other country; and
· a requirement that an administrator or statutory manager in Australia advise APRA if the administrator or statutory manager has reasonable cause to believe that the proposed exercise of a function or power by the administrator or statutory manager is likely to have a detrimental effect on financial stability in New Zealand.

2. Ring-fencing and Subsidiarization

- *Ring-fencing*

The basic objective of ring-fencing is to protect the domestic assets so that they can be seized and liquidated under local law in case of failure of the parent. In this way, ring-fencing can help protect the banking system and depositors in the host country. Ring-fencing can take various forms, can occur at various stages of the supervision process and can be applied at the level of the individual institution and of the larger banking system.

In reality, practices vary widely across the spectrum with some jurisdictions imposing asset pledges or asset maintenance requirements so as to assure that sufficient assets are available for the local stakeholders in the event of failure of a bank. Supervisors may also require specific “firewalls” between the bank and the other entities of the banking group. Under this practice the bank is isolated from other entities in the group by taking several actions, including (i) prohibiting or placing limits on the financial exposure of a bank towards other entities of the banking group; (ii) limiting the funding the bank receives from other banking group entities; and (iii) ensuring that the directors and management of the bank can operate the bank independently from the management of the group (Song, 2004) [21].

There are several arguments against ring-fencing. First, ring-fencing measures taken by authorities in one country could increase stress on the banking group's legal entities in other jurisdictions or for the banking group as a whole. This is particularly true for sudden ring-fencing decisions during the remedial stage or during a crisis. In the theoretical case that a fully centralized liquidity model is used, it is essential that funds can flow seamlessly across jurisdictions to the various entities of the group. If these liquidity flows abruptly cease to operate in distress, the situation will quickly snowball, becoming a solvency issue.

Second, ring-fencing decisions need to be carefully balanced with the impact on the economy and credit supply in the host country as it could undermine access to capital markets for emerging countries and the expansion of international trade more globally.

Third, ring-fencing increases the cost on the banking group. Cerrutti and others (2010) prepared a simulation of the capital needs of 25 large European banking groups resulting from a credit shock affecting their subsidiaries in the region. They demonstrate that these groups would need to have substantially higher capital buffers at the parent and/or subsidiary level if they face a risk of being unable to transfer capital and/or profits across borders. The costs borne by private banks cannot be considered in isolation but must be assessed against the cost of financial crises, of which the tax payer bears a substantial part.

- *Subsidiarization*

Under the subsidiarization scheme, international banks are required to convert their foreign branches and business lines into autonomous, stand-alone subsidiaries subject to the regulation and supervision of each host country. Under its most extreme form, authorities will not only require that operations by foreign banks be conducted through standalone subsidiaries but also that intra-group transfers or other operational group dependencies (such as IT, outsourcing and back office functions) are eliminated. This model is sometimes also referred to as the Stand Alone Subsidiary model (SAS). Under this solution, each host jurisdiction would ensure that each banking subsidiary in its country is structured such that it can operate independently and is fully self sufficient. For example, it would have to be able to stand alone in the areas of capital, liquidity, operations and risk management. From the perspective of the host supervisor, this protects the local banking system from negative spillovers from the rest of the group. It would also allow resolution of problem parts of the group with minimal disruption. Although subsidiaries can in theory operate independently, indirect contagion risk arising from reputation risk cannot that easily be eliminated.

[21] For example, Australia requires that a bank’s assets in Australia must be equal to or greater than the total amount of its deposit liabilities in Australia.

There is a general understanding in the literature that incentive problems in cross border supervision are less prominent for subsidiaries, as they are independent legal entities under the control of the host supervisor (Mayes & Vesaya 1998; Schueler, 2003). Thus, when allowing significant foreign banking operations to operate in their country, some host supervisors require that they do so as subsidiaries.[22] While the legal distinction between branches and subsidiaries remains very important for resolution, it may well have become a more academic discussion for supervision purposes. Indeed, from a host supervisory perspective, the independent subsidiary view is increasingly undermined by the growing integration and centralization of key management functions, like liquidity and funding, compliance and auditing and internal controls (Schoenmaker and Oosterloo, 2005). Likewise, common practices such the issuance of group-wide guarantees and cross-guarantees, the raising of equity through entities in "cheaper" jurisdictions and the onward direction of these funds to the jurisdictions where they generate a higher return further blur the legal distinction between subsidiaries and branches (Fiechter and others 2011).

Cross border banks are now generally organized along business lines, irrespective of whether they are branches or subsidiaries, leading to operational structures that are very different from legal structures. This trend has made it very hard for banks and banking supervisors alike to allocate activities to legal entities, which still form the basis for supervisory and regulatory task-sharing. Also, under the Basel II framework, significant capital reductions can be achieved by applying the advanced capital calculation approaches and this has spurred banks to organize their risk management functions more centrally. As a result of this increased integration of functions in banking groups, host supervisors sometimes have to rely on supervisory work and complex judgments of home supervisors, without having the means to investigate and assess the supervisory framework or the drivers leading to these judgments. For this reason, many practical challenges remain and subsidiarization cannot be seen as a short to medium term panacea for host supervisors.

The impact of these centralized key functions within a banking group was raised by the Basel Committee in 2003 when it suggested that where "mind and management" are centralized in a banking group, "the host country supervisor may choose to rely entirely on approval work conducted by the home country supervisor" (paragraph 16, p.7) so as to avoid overlaps in supervision, preserve authorities' supervisory resources and reduce implementation burdens for cross-border banks. It is questionable how host supervisors could justify this proposed "supervisory outsourcing" approach to their respective domestic principals, particularly in view of the lack of incentives for the home supervisor to take into account the cross border externalities. For host supervisors, the fundamental point of opposition is that responsibility and decision making become separated. Indeed, the final responsibility for supervising foreign subsidiaries remains with the host supervisor and the host country tax payer still has to pick up the bill if things go wrong.

In summary, as long as the incentive distortions between home and host supervisors remain unaddressed, carefully designed and timed ring-fencing or subsidiarization remain options for most host supervisors. Ring-fencing and subsidiarization have the additional advantage that, in case the foreign operations are

[27] For example , Brazil, Mexico and New Zealand require or strongly encourage local subsidiaries. Brazil also has regulations to prevent subsidiaries from returning earnings to the parent bank. In Argentina, Bolivia, India and the Republic of Korea, branches are subject to capital and liquidity requirements similar to local subsidiaries. Albania has established a "systemic" threshold above which the regulation of subsidiaries apply to branches.

material to the group, home supervisors may be inclined to step up information sharing or address host concerns in order to avoid escalating ring-fencing actions by the host supervisor. Nevertheless, unilateral host regulatory and supervisory action requires strong and independent supervisors, with the capacity to make robust, balanced and timely assessments. The frequently observed lack of independence, lack of data and the widespread human capacity constraints in lower- and middle-income host countries make strong host regulatory and supervisory responses unlikely.

3. Binding Code of Conduct or Regulation

The 2009 IMF report *"Initial Lessons of the Crisis"* proposes the establishment of a framework providing a binding code of conduct across nations (IMF, 2009). "One part would be an international charter for banks that operate across borders, establishing the procedures for joint risk assessment by various supervisors, remedial actions and burden-sharing. Another would be for home and host supervisors to agree on these issues and for the colleges to become the arbiters in enforcing understandings (e.g., burden sharing of losses in proportion to a bank's exposure in each jurisdiction)" (p. 10)

Although in principle, a binding code of conduct appears to be the ideal solution, broad international agreement on such a code appears very unlikely at this stage. Also, it would be essential that a code be enforceable. That said, this approach should not be ruled out in a regional or bank-specific context.

Pistor (2010) has also analyzed effect-based regulation as a valid addition to the home country control principle. Generally speaking, effect-based regulation gives host countries the option to exercise regulatory jurisdiction, whether or not the entity is domiciled within their jurisdiction, in the event that their financial or economic system might be inadvertently affected by a financial intermediary's actions. The scope of Pistor's work is much broader than supervisory cooperation between home and host supervisors as described in this paper. It is also geared towards banking regulation in the EU. At a global level and broadly speaking, however, effect-based regulation is already in place to some extent in the current supervisory task-sharing arrangements. Indeed, host jurisdictions have the legal ability, and do use that legal ability, to impose additional regulation on bank subsidiaries, branches and other legal entities. Some services may be offered in the host country without a physical presence, but these issues are outside the scope of this paper.

4. A Fundamental Analysis of the Supervisory Cross Border Arrangements and an Intermediate Solution

As a starting point, it is better to create a framework that secures the right incentives than to try to control behavior arising from the distortions in incentives. Ultimately, more fundamental improvements in the institutional and legal setting in the spirit of a binding code of conduct described above are needed. This is a complicated and long term exercise that is made even more difficult by that fact that financial regulation needs proactive ex ante solutions, in contrast to other sovereign cooperation problems (Pistor 2010). In this respect, it would be in everyone's interest that the current supervisory task-sharing be fundamentally analyzed and re-assessed, using the principles of mechanism design[23], to assess if, and

[23] Mechanism design or reverse game theory is a field in game theory studying solution concepts for a class of private information games. In layman's terms, mechanism design deals with situations where a planner has to reach a decision when the

where, improvements can be made. This initiative could take the form of a new Basel "*Concordat*" or a new framework for home and host cooperation. It should consist of carrot and stick approach to align home-host information sharing incentives and, importantly, harmonize resolution with proactive supervision (Claessens, Herring and Shoenmaker 2010).

In the meantime, for each supervisory college, a pragmatic and voluntary oversight mechanism could be established, especially addressing those particular scenarios where the incentive misalignments are the most significant. The observation that many home supervisors simultaneously act as host supervisors makes a voluntary agreement to cooperate under the auspices of an oversight body more achievable. This framework would represent a significant step forward and would be evidenced by a non-binding understanding among participating supervisory authorities. Inspiration for the building blocks of this framework can be found when reviewing the EU operational guidelines for supervisory colleges.

Ideally the proposed framework could comprise the following elements:

- Oversight of the operations of supervisory colleges by an international body, such as the Basel Committee or the Financial Stability Board, including a mediation and conflict resolution framework. In particular, the home and/or the host supervisor should inform the oversight body in case of difficulties related to the conclusion of written agreements, the determination of significant entities, or the membership or structure issues. Furthermore, the agenda and general outcome of the college activities should be made available to the oversight body in its capacity as an observer to college meetings;
- No decision making authority with the oversight body, but a recommendation of good practice;
- Attendance of all meetings by an observer of the international oversight body who should also regularly liaise with host supervisors individually;
- Full disclosure of the composition and operations of supervisory colleges to the oversight body, including the information shared so that it can be assessed if this is adequate;
- Surveys on at least an annual basis on the effectiveness of the operation of the college among home and host supervisors administered by the oversight body;
- Peer reviews and thematic reviews on the adherence to the best practice and disclosure of the high level results;
- Clarification and alignment of the interactions between supervisory colleges and crisis management groups;

VI. Conclusion

The global financial crisis has demonstrated significant gaps in cooperation among banking supervisors. As a primary mechanism to strengthen supervisory cooperation, the G-20 has advocated the use of supervisory colleges. Supervisory colleges were active well before and during the global financial crisis, but almost no analysis of their role and operations during the crisis can be found. Despite this, colleges have now been established and are operational for each globally systemic financial institution. Good practice principles governing their operations have also been released.

quality of the decision relies on information spread among a number of people. The idea main idea is that any solution should take into account the incentives of self-interested agents, i.e., the people on whose information the decision relies must find it in their interest to reveal that information.

Supervisory colleges operate within supervisory arrangements for effective cross border supervision, formalized in Core Principle 24 and 25 of the Basel Core Principles for Effective Banking Supervision. These principles promulgate a leading role for the home supervisor in the supervision of a banking group. From the perspective of the host supervisor, several gaps in the current supervisory and regulatory framework can be observed. These include the absence of an effective resolution mechanism, a supervisory task-sharing that favors home supervisors, conflicting incentives for information sharing between home and host supervisors, lack of oversight and enforcement in case effective supervisory cooperation does not take place as well as the absence of mediation or conflict resolution mechanisms.

This paper used the principal-agent framework to explain incentive conflicts in banking supervision in both a single country and a multiple country setting. Two broad forces work against timely, reliable and effective information-sharing between supervisors and ultimately against effective cross border supervision. First, there are information asymmetry problems resulting in self-capture, industry capture and political capture at the purely domestic levels which are amplified in a cross border context. Second, supervisors do not take into account externalities in other jurisdictions. In addition to these two forces, many other factors worsen the obstacles to effective cross border supervision, such as differences in mandates and tolerance for failure, confidentiality concerns, legal constraints, constraints on the capacity of supervisory agencies, doubts about the quality of supervision, the geographic risk profile of the banking group, the stage of supervision and lack of a common terminology, legal framework and prudential reporting systems.

Incentives for home-host information sharing were analyzed using a simple example of a systemically important banking group with centralized liquidity, capital and risk management functions. In the preventative stage of supervision, there are only a limited number of instances where both home and host supervisors have strong incentives to share information. As the health of the parent deteriorates, incentives for information sharing conflict and the home supervisor has the incentive to delay and minimize the seriousness of his concerns. The effects can be systemically important and devastating for host supervisors, particularly if the foreign presence is significant in their jurisdiction. In the opposite scenario, as the health of the subsidiary deteriorates, the host supervisor has the incentive to overstate concerns, especially if the foreign operations are systemic in the host country. The lack of agreed upon resolution and burden-sharing mechanisms means that, as prudential concerns arise, the domestic mandate of the supervisor becomes predominant. It is therefore crucial that policy makers do not divorce the crisis management and resolution policy debate from the discussion on good supervisory practices for supervisory colleges. Crisis management, resolution and proactive supervision should be part of an integrated and streamlined approach adopted by supervisory colleges and crisis management groups.

Three broad strands of policy options to address the identified incentive conflicts are put forward in the literature. The first strand focuses on improved supervisory cooperation, mainly through the formation of supervisory colleges. The second strand includes ring-fencing and subsidiarization options. The third strand advocates the establishment of a framework providing a binding code of conduct across nations.

Policy makers should be aware that incentive conflicts cannot be addressed by better cooperation alone. What is needed is a rigorous analysis and review of the supervisory task-sharing framework so that it ensures the right incentives at every stage of the supervision process. The supervisory task-sharing should be tailored to ensure that incentive distortions are addressed. Prudential supervisors of cross border banks must work closely together in a partnership towards the common objective of effective supervision of the banking group. Thus, a fundamental analysis and assessment of the supervisory arrangements using the principles of mechanism design should be explored. Obviously this is a complex and long term exercise.

In the meantime, a pragmatic solution would be the introduction of an oversight role of the operations of supervisory colleges to be conducted by an international oversight body. This is a second best and intermediate solution but would represent a significant step forward in the prevention of supervisory cooperation failures.

Annex A: A Descriptive Conceptual Model Describing the Incentives for Home and Host Supervisors to Share Information

Consider an integrated banking group with centralized liquidity, capital and risk management where the subsidiary is dependent on the parent bank for capital, funding and liquidity. The banking group has a home and a host supervisor, which also act as agents to their respective governments. Assume that this is a systemically important bank in the home country. The consolidated banking group is headed by the parent bank and the consolidated banking group is supervised by the home supervisor. The model is descriptive in that it does not solve for the equilibrium behaviors.

1. *The Home Supervisor, Host Supervisor and Geographic Risk Profile of the Banking Group*

The supervision of the banking group involves the home supervisor and a host supervisor.
Home supervisor = Supervisor A or S_A
Host supervisor = Supervisor I or S_i
Consider total assets of the banking group or A where ω_i is the proportion of the assets located in the host jurisdiction i.
So that: $\omega_i = \frac{Ai}{A}$, and $A = \Sigma\ \omega_i A$ with $\omega_i, A > 0$.
Assume T is the threshold, set by the home supervisor and measured in asset value, at which level the foreign operations become material for the banking group.
Hence, when $A_i \geq T$, ; the operations in host country i are material for the banking group.
When $A_i < T$,; the operations in host country i are not material to the banking group.

The systemic risk of the banking group's foreign operations in the host country, indicated by SR_i, is measured by the size of the financial system compared to the assets of the banking group in the host country.
F_i = Size of the financial system in the host country
Thus, $SR_i = \frac{\omega iA}{Fi}$, with SRi = {significant, not significant}

Assume the health of the banking group, denoted by Θ, is approximated by the nature of supervisory actions namely: prevention and remedial or $\Theta = \{\theta_{prev,}\ \theta_{rem}\}$.
Assume the health of the subsidiary in the host jurisdictions $\Theta_i = \{\theta_{i\_prev},\ \theta_{i\_rem}\}$ with $\Theta = f(\omega_i, \Theta_i)$. However, as the banking group is integrated Θ_i is also dependent on the overall health of the banking group or $\Theta_i = f(\Theta)$.

2. *Supervisory Cooperation*

S_i relies on S_A to receive the information required to determine Θ_i.
S_A relies on S_i to determine Θ.
However, when $A_i < T$, the information on Θ_i becomes irrelevant to $S_{A,}$ as the operations in jurisdiction i are too small to influence Θ.

Host information sharing

S_i has four individual possible actions denoted by $\{I_{\theta i}, R_i, OC_{\Theta i}\ DN\}$:

1. Openly share accurate and timely information on Θ_i or $I_{\theta i}$

2. Ring-fence, or R_i
3. Overstate concerns about $\Theta_{i,}$ or $OC_{\Theta i}$
4. do nothing or DN[24]

   S_i can also combine ring-fencing with the sharing of accurate and timely information and with overstating concerns about Θ_i.

Home information sharing

S_A has three individual actions denoted by { I_Θ, $MD_{\Theta,}$ DN};

1. Openly share accurate and timely information on Θ, or I_Θ
2. Minimize and delay genuine concerns about Θ, or MD_Θ
3. Do nothing, or DN.

   The incentive for S_A to openly share information with $S_{i,}$ or $I_{\Theta,}$ is directly influenced by the size of A_i and by Θ.

Table 1: Summary of Likely Outcomes When the Health of the Parent Bank is Deteriorating

Incentives for		***Stage I Prevention*** **$\Theta = \theta_{prev}$**		***Stage II – Remedial*** **$\Theta = \theta_{rem}$**	
S_A	if $A_i \geq T$	I_Θ (Cell 1)		MD_Θ (Cell 8)	
	if $A_i < T$ but SR_i is significant	DN (Cell 2)		DN (Cell 9)	
	if $Ai_i < T$	DN (Cell 3)		DN (Cell 10)	
		If $A_i \geq T$	If $A_i < T$	If $A_i \geq T$	If $A_i < T$
S_i	SR_i is significant	$I_{\theta i}$ (Cell 4)	$I_{\theta i}$ (Cell 6)	R_i, $I_{\theta i}$ (Cell 11)	R_i $I_{\theta i}$ (Cell 13)
	SR_i is not significant	DN (Cell 5)	DN (Cell 7)	R_i (Cell 12)	R_i (Cell 14)

Source: Author

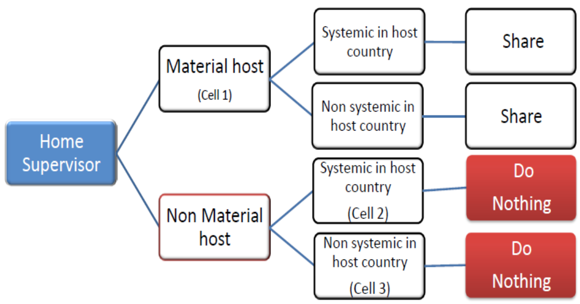
Table 2: Summary of Likely Outcomes When the Health of the Subsidiary is Deteriorating

Incentives for		***Stage I Prevention*** **$\Theta_i = \theta_{prev}$**		***Stage II – Remedial*** **$\Theta_i = \theta_{rem}$**	
		If $A_i \geq T$	If $A_i < T$	If $A_i \geq T$	If $A_i < T$
S_i	SR_i is significant	$I_{\theta i}$ (Cell 4)	$I_{\theta i}$ (Cell 6)	$OC_{\theta i}$, R_i (Cell 17)	$OC_{\theta i}$, R_i (Cell 15)
	SR_i is not significant	DN (Cell 5)	DN (Cell 7)	R_i (Cell 18)	R_i (Cell 16)
S_A	if $A_i \geq T$	I_Θ (Cell 1)		I_Θ (Cell 19)	
	if $A_i < T$ but SR_i is significant	DN (Cell 2)		DN (Cell 20)	
	if $Ai_i < T$	DN (Cell 3)		DN (Cell 21)	

Source: Author

[24] This means that the supervisor does have a lower incentive to share information. The supervisory authority may still have an incentive to take action domestically.

Figure 1: Incentives for the home supervisor to share information with the host supervisor - Prevention stage



Source: Author

Figure 2: Incentives for the host supervisor to share information with the home supervisor – Prevention stage

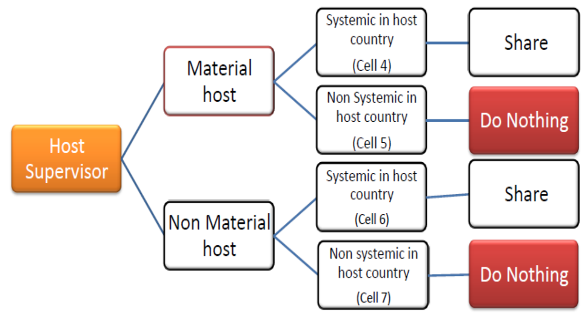
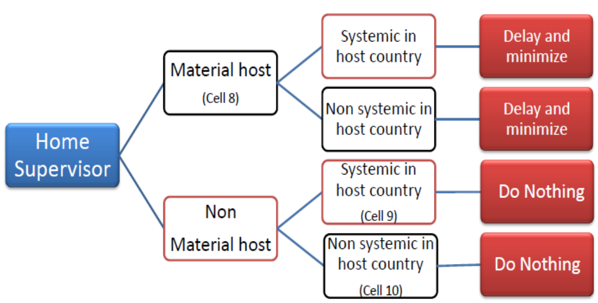


Figure 3: Incentives for the home supervisor to share information with the host supervisor Problems in the parent bank



Source: Author

Figure 4: Incentives for the host supervisor to share information with the home supervisor Problems in the parent bank

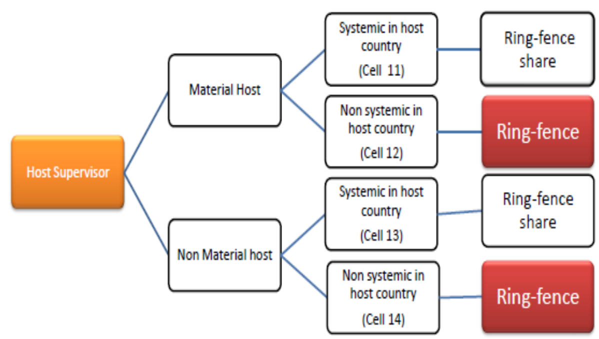
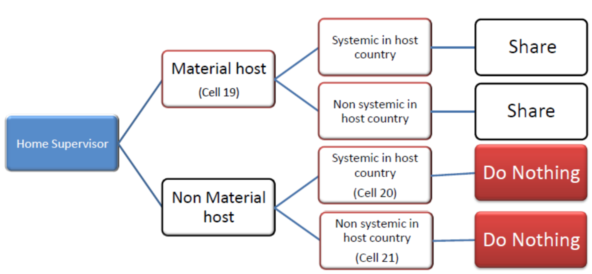
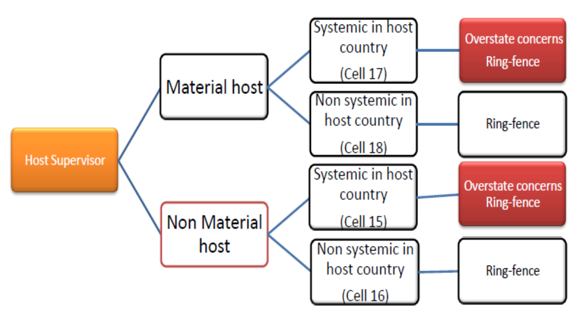


Figure 5: Incentives for the home supervisor to share information with the host supervisor Problems in the subsidiary bank



Source: Author

Figure 6: Incentives for the host supervisor to share information with the home supervisor Problems in the subsidiary bank



Bibliography

Alford, D. 2010. "Supervisory colleges, the global financial crisis and improving international supervisory coordination" Available at SSRN: http://ssrn.com/abstract, (January).

Basel Committee on Banking Supervision. 1975. *Concordat* . (*Report on the supervision of banks' foreign establishments*). Bank for International Settlements. Basel.

--------. 1983. *Principles for the supervision of banks' foreign establishment*. Bank for International Settlements. Basel.

---------. 1992. "*Minimum standards for the supervision of international banking groups and their cross-border establishments*". Bank for International Settlements. Basel.

---------. 1996. *Supervision of Cross Border Banking.* Basel.

---------. 2001. *Essential elements of a statement of cooperation between banking supervisors*. Bank for International Settlements, Basel.

---------. 2003. *High-level principles for the cross-border implementation of the New Accord*. Bank for International Settlements. Basel.

---------. 2006. *Home-host information sharing for effective Basel II implementation*. Bank for International Settlements. Basel.

---------. 2006b. *Core Principles for Effective Banking Supervision – Methodology*. Bank for International Settlements. Basel.

----------. 2010. *Good Practice Principles on Supervisory Colleges*. Bank for International Settlements. Basel.

----------. 2011. *Global Systemically Important Banks: Assessment Methodology and Additional Loss Absorbency Requirement*. Bank for International Settlements. Basel.

Baxter, L. 2011. "Capture in Financial Regulation: Can We Channel it Toward the Common Good ?" *Cornell Journal of Law and Public Policy*, Forthcoming.

Buiter, W. 2008. "Lessons from the North Atlantic Financial Crisis". Paper prepared for presentation at the conference "The Role of Money Markets" jointly organized by Columbia Business School and the Federal Reserve Bank of New York on May 29-30, 2008.

Celik, G. 2004. "Mechanism Design with Collusive Supervision". *Journal of Economic Theory*, Elsevier, vol. 144(1), pages 69-95, (January).

Cerutti E. , Ilyina A., Makarova Y. and Schmieder C. 2010. "Bankers Without Borders? Implications of Ring-Fencing for European Cross-Border Banks". IMF Working paper 10/247, International Monetary Fund, Washington DC, (November).

Claessens, S. , Herring, R. and Schoenmaker, D. 2010. "A safer world financial system: Improving the resolution of systemic institutions - Geneva report on the World Economy", International Center for Monetary and Banking Studies. Geneva (July).

Dell' Ariccia, G. and Marquez R. 2001. "Competition among regulators". IMF Working paper 01/73, International Monetary Fund, Washington DC, (May)

Enria A. and Vesala J. 2003. "Externalities in supervision" in :Kremers J.J.M., D. Schoenmaker and P.J. Wierts (eds), Financial Supervision in Europe, Edward Elgar, 60-89.

Dijkstra, R.J., 2010. "Accountability of financial supervisory agencies: an incentive approach" *Journal of banking regulation*, Vol 11, 2, 115-128.

FSB (Financial Stability Board). 2010a. *FSB Framework for Strengthening Adherence to International Standards*. January 9. Bank for International Settlements, Basel.

--------. 2010b. "*Intensity and Effectiveness of SIFI Supervision*" Bank for International Settlements, Basel.

---------. 2010c. *Reducing the Moral Hazard Posed by Systemically Important Financial Institutions.* October. Bank for International Settlements, Basel.

---------. 2010d. *Progress since the St. Andrews Meeting on Implementing the G-20 Recommendations for Strengthening Financial Stability*. Report of the Financial Stability Board to G-20 Finance Ministers and Governors. April 19. Bank for International Settlements, Basel.

Goldstein, M. and Vernon, N., 2011. "Too big to fail, the transatlantic debate". Working Paper 11-2, Peterson Institute for International Economics, Washington D.C. (January).

Goodhardt C. 1996. "An incentive structure for financial regulation." London School of Economics, Financial Markets Group, Special paper 88, Economic and Social Research Council, London (July).

Ferrarini, G. and Chiodini, F. 2010. "Regulating multinational banks in Europe, an assessment of the new supervisory framework", European Corporate Governance Institute, Legal working paper 158/2010.

Herring, R. 2007. "Conflicts between home and host country prudential supervisors" in D. Evanoff, J. LaBrosse and G. Kaufman – International financial instability: Global banking and national regulation.

Holthausen, C. and Ronde, T. 2004. "Cooperation in International Banking Supervision", Working Paper Series Nr 316, European Central Bank, Frankfurt am Main.

Hupkes, E., Quintyn, M. Taylor, M. 2005. "The Accountability of Financial Sector Supervisors: Principles and Practice". IMF Working Paper WP/05/51, International Monetary Fund, Washington D.C. (March).

IMF (International Monetary Fund). 2009. "*Initial Lessons of the Crisis*" International Monetary Fund, Washington D.C. (February)

-------.2010. "Resolution of Cross-Border Banks – A Proposed Framework for Enhanced Coordination". International Monetary Fund, Washington D.C., (June)

Jensen M. and Meckling W. 1976. "Theory of the firm: Managerial behavior, agency costs, and capital structure. Journal of Financial Economics 3, 305-360

Fiechter J. , Ötker-Robe, I., Ilyina, A., Hsu, M., Santos, A. and Surti, J. 2011. "Subsidiaries or Branches, does one size fits all?" IMF Staff Discussion Note, International Monetary Fund, Washington DC, (March)

Kane E.J. 1989a. "Changing incentives facing financial services regulators". Journal of financial services research" 2(3), 265-274

Kane, E.J. 1989b. "The S&L insurance mess: How did it happen?" Urban Institute press, Washington DC

Kane, E.J. 1990, "Principal-Agent problems in S&L Salvage", Journal of Finance 45(3), p. 755-764.

Kane, E.J. 1997. "Ethical Foundations of Financial Regulation", Journal of Financial Services Research 12:1, p. 51-74.

Kane, E.J. 2002. "Using deferred compensation to strengthen the ethics of financial regulation", Journal of Banking and Finance 26, p. 1919-1933

Mayes, D. and Vesala, J. 2000. "On the problems of home country control." Current Politics and Economics of Europe 10, 1-26.

Mishkin , F.S. 2001. "Prudential supervision: Why is it important and what are the issues" Mishkin FS: Prudential supervision what works and what doesn't , Chicago, The University of Chicago Press 1-29.

Palmer J. and Cerruti C. 2009. "Is there a need to rethink the supervisory process?" Paper presented at the The World Bank and Banco de Espana Conference of Reforming Financial Regulation and Supervision "Going Back to Basics" , Madrid 15 June 2009.

Pistor, K., 2010. "Host's dilemma: Rethinking EU Banking Regulation in the Light of the Global Crisis", Columbia Law and Economics Working Paper nr 378.

Rosengren, E., 2007. "Challenges in cross border supervision and regulation" in International financial instability: Global banking and national regulation p. 233-238 edited by D. Evanoff, J. LaBrosse and G. Kaufman, World Scientific, New Jersey.

Schűler, M., 2003. "Incentive problems in banking supervision – the European case", Discussion Paper No 03-62, Center for European Economic research, Mannheim.

Schoenmaker, D. and Oosterloo, S. 2005. "Financial Supervision in an integrating Europe; Measuring Cross Border Externalities" International Finance, Volume 8, Issue 1, p 1-27 (March)

Smaghi, B. 2008. Introductory remarks at the Roundtable Discussion "How to Strengthen Europe's financial Stability Framework" held at the " Financial Stability Framework for Europe: Managing Financial Soundness in an Integrated Market", Center For Financial Studies – International Monetary Fund Conference in Frankfurt am Main, 26, September 2008.

Smaghi, B. 2008. “A Financial Stability Framework for Europe: Managing Financial Soundness in an Integrated Market”, Paper presented at the Center For Financial Studies – International Monetary Fund Conference in Frankfurt am Main, 26, September 2008. .. 2

Song, I., 2004. “Foreign Bank Supervision and Challenges to Emerging Market Supervisors” IMF Working Paper 04/82, International Monetary Fund, Washington D.C.

Stolz, S., 2002. “Banking Supervision in Integrated Financial Markets: Implications for the EU”, CESifo Economic Studies, Working Paper Series No 812.

Sullivan & Sheffrin. 2003. Economics: Principles in action, Upper Saddle river NJ: Pearson Prentice Hall, p. 31

Tabellini, G. 2008. “Why did bank supervision fail?” VoxEU.org 19 March 2008

Ward, J. 2002. “The supervisory approach: A critique”. Working paper No 02, p26, Cambridge Endowment for Research in Finance,

Wellink, N. 2011. “Basel III and beyond”. Remarks at the FSI and EMEAP Working Group on Banking Supervision, High Level Meeting on Better Supervision and Better Banking in a Post-crisis Era 17 January 2011, Kuala Lumpur.